

**WHAT IS CLAIMED IS:**

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1. In a cellular mobile radio communications system including at least one mobile station and at least two base stations, a method of transferring communication with said mobile station from a first to a second of said base stations comprising the steps of:

transmitting a signal on a first frequency from said first base station to said mobile station using a waveform encoded with a first code;

10 sending a transfer indication from said first base station via a fixed network to said second base station;

upon receipt of said transfer indication, transmitting a signal on said first frequency from said second base station to said mobile station using a waveform encoded with a second code; and

15 receiving at said mobile station said signals transmitted on said first frequency from said first and second base stations and decoding said signals using said first and second codes to produce a first and second demodulated signal.

2. In a cellular mobile radio communications system including at least one mobile station and at least two base stations, a method of transferring communication with said mobile station from a first to a second of said base stations comprising the steps of:

30 transmitting a control signal on a first frequency from said first base station to said mobile station using a waveform encoded with a first code to inform said mobile station of a second frequency and second code;

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5 sending a transfer indication from said first base station via a fixed network to said second base station;

10 upon receipt of said transfer indication, transmitting a signal on the second frequency from said second base station to said mobile station using a waveform encoded with the second code; and

15 upon receipt by said mobile of said control signal, receiving said signal on said second frequency and decoding it with said second code to produce a demodulated signal.

20 3. A method according to claim 1, wherein said first code includes a first base station code combined with a first access code and said second code includes a second base station code combined with a second access code.

25 4. The method according to claim 1, further including the step of:  
error correcting said demodulated signals.

30 5. The method according to claim 4, wherein said error correcting step comprises performing diversity selection of symbols from said first and second demodulated signals.

35 6. The method according to claim 4, wherein said error correcting step comprises performing diversity combination of said first and second demodulated signals.

7. In a cellular mobile radio communications system including at least one mobile station and at least two base stations, a method of transferring communication with said mobile station from a first

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to a second of said base stations comprising the steps of:

5. decoding, at said mobile station, signals received simultaneously from said at least two base stations on a first frequency and quantifying their relative signal strengths;

transmitting a signal from said mobile station indicating said relative signal strengths;

10. receiving at one of said at least two base stations said signal indicative of signal strengths and sending said signal to a network controller; and

15. processing said indicated signal strengths in said network controller and selecting one of said at least two base stations to maintain communication with said mobile station.

20. 8. A method according to claim 7, wherein said network controller commands said selected base station to initiate a transmission to said mobile station using an available access code.

25. 9. A method according to claim 7, wherein said access code is composed of a base station code combined with a traffic channel code.

30. 10. In a cellular mobile radio communications system including at least one mobile station and at least two base stations, a method of transferring communication with said mobile station from a first to a second of said base stations comprising the steps of:

transmitting traffic on a first frequency from said first base station to said mobile station using a waveform encoded with a first code;

35. transmitting a control message on said first frequency from said first base station to said

mobile station using a waveform encoded with a second code;

5 sending a transfer indication from said first base station via a fixed network to said second base station;

upon receipt of said indication, transmitting a signal on said first frequency from said second base station to said mobile station using a waveform encoded with a third code; and

10 receiving at said mobile station said signals transmitted on said first frequency from said first and second base station and decoding these signals using said first, second and third codes to obtain a first demodulated traffic signal, a decoded control message and a second demodulated traffic signal.

15 11. A method according to claim 10, wherein said first code includes a combination of a first base station code with a first traffic channel access code and said second code includes combination of said first base station code with a control channel code.

20 12. A method according to claim 11 in which said third code includes a combination of a second base station code with a second traffic channel code.

25 13. A method according to claim 11 in which said third code includes combination of a second base station code and a control channel code.

30 14. A cellular mobile radio telephone system using Code Division Multiple Access to facilitate handover between a first and second base station comprising:

35 antenna, filtering, amplifying and downconverting means for producing an analog signal representative of

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signals received from said first and second base station on the same frequency;

analog to digital conversion means for converting said analog signal to a sequence of numerical values;

CDMA processing means for processing and decoding said numerical values using a first and second code to obtain demodulated data signals received from said first and second base station transmitters and measurements of their relative signal strengths or qualities;

encoding means to encode said signal strength or qualities into a data message; and

CDMA transmitting means to transmit said data message.

15. A mobile station according to claim 14, wherein said first code includes combination of a first base station code with a first access code and said second code includes combination of a second base station code with a second access code.

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